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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/364,423	07/30/1999	MAKOTO WATANABE	12854	9435

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EXAMINER

NGUYEN, DUNG T

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/364,423

Applicant(s)

WATANABE ET AL.

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,7,8,10,11,13,14,17,18,21 and 22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-27 is/are allowed.
- 6) ☐ Claim(s) 1,2,5,6,9,12,15,16,19,20 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. Applicants' amendment dated 06/19/2003 has been received and entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2, 5-6, 9, 12, 15-16, 19-20, 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al., US Patent No. 6,064,460, in view of Numano et al., US Patent No. 6,313,898, as stated in the final office action dated 11/20/2002.

Regarding claims 1, 5, 15, 19, 23, Ohta et al. disclose an in-plane switching (ISP) liquid crystal display (LCD) device (figures 1A-1D and 2) comprising:

- a pair of transparent insulating substrates (glass substrates SUB1, SUB2);
- liquid crystal molecules (LC) in a liquid crystal layer;
- a plurality of scan lines (GL);
- a plurality of signal lines (DL);
- a plurality of counter electrodes (CT);
- a plurality of pixel electrodes (PX), wherein each of pixel electrodes provided between the common electrodes at each pixel;
- switching elements (TFT);

a pair of alignment layers (ORI); wherein an alignment process is carried out such that the alignment of a pixel aperture region of the alignment layers has an inclination of angle (figs 1C and 1D);

a light-shielding layer (black matrix BM).

Ohta et al. do not disclose the alignment process is carried out such that the alignment layer of a pixel aperture region is different from a signal line regions. Numano et al. do disclose that alignment of alignment layers differs at regions (19a) of a signal lines (7) and their vicinities (e.g., pixel aperture region) (see figure 7). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to modify the Ohta et al. device having an alignment layer in which liquid crystal molecules at a pixel region are aligned different from that at a signal line as shown by Numano et al. in order to obtain an LCD device which is high in aperture ratio and is free from the cross talk (see abstract).

Regarding claims 2, 6, 9, 12, 16 and 20, although the modification of Ohta et al. do not disclose liquid crystal component having a positive dielectric constant anisotropy, it would have been obvious to a person of ordinary skill in the art at the time the invention to use liquid crystal molecules having a positive dielectric constant anisotropy in an LCD device because it is notoriously well known in the art to reduce a driving voltage in the LCD device.

Allowable Subject Matter

1. Claims 24-27 are allowed.

Response to Arguments

2. Applicant's arguments filed 06/19/2003 have been fully considered but they are not persuasive as follow:

Regarding claim 1, Applicants, again, contend that neither Ohta et al. nor Numano et al., taken alone or in combination, disclose, teach or suggest alignment direction of the second alignment at the signal line regions differing from alignment direction layer at the pixel aperture regions, nor pixel aperture regions which include only a part of the pixel electrode (amendment, paragraph bridging pages 9 and 10), since Numano et al. do not disclose a pixel aperture region which includes the pixel aperture and a part of the pixel electrode (amendment, page 9). The Examiner, again, respectfully disagrees with the applicant's viewpoint and respectfully invited the applicant to review the Ohta et al. reference (figure 2) in which Ohta et al. do disclose a pixel regions (aperture pixel and a part of pixel electrode) and a signal line regions (signal lines and adjacent regions, namely black matrix regions) as claimed. In addition, the Applicants' alignment which covers pixel aperture regions (e.g., regions 55) and the other part of the pixel electrode (e.g., regions 55A and 55B), according to figures 10-11 and 15 (region 52), would have the same alignment direction which is different from alignment direction of that alignment layer at said signal line regions (regions 54A and 54B), as is the case in Numano et al. . In other words, although Numano et al. do not disclose "pixel aperture regions" which include only a part of the pixel electrode, the Applicants' pixel aperture region and the Numano et al. pixel aperture region would be the same as well, even though that is a part or entire pixel electrode. Therefore, the modification to Ohta et al. by Numano et al. would form an alignment direction of a second alignment at the signal line regions differing from alignment direction layer at the pixel aperture

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regions and such modification would have been obvious to one skilled in the art to obtain an LCD device which is high in aperture ratio and is free from the cross talk (Numano et al., abstract).

Regarding claims 2, 5-6, 9, 12, 15-16, 20 and 23, those claims depend, either directly or indirectly, from claims 1. Therefore, such claims would have been obvious at least for the above reason.

Accordingly, the rejection of claims 1-2, 5-6, 9, 12, 15-16, 19-20 and 23 stand.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 703-305-0423. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

DN
09/03/2003



Dung Nguyen
Examiner
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